

Method and Apparatus for Metalworking Using a Coolant Fluid

Abstract

A metal machining apparatus for removal of metal from a workpiece, that employs a laser-targeted coolant nozzle to apply coolant fluid to a machining tool, such as a grinding wheel, to remove metal from a workpiece. The laser-targeted coolant nozzle has a coolant nozzle body having a flow passage for the coolant fluid, and a laser bore. The laser bore forms an access opening in the outer surface of the nozzle body in through which a visible laser can be inserted. The laser bore provides a line of sight with the flow passage outlet. The visible laser can be inserted into the laser bore, and is configured so that the visible laser beam cooperates with a positioning feature on the nozzle body for visually positioning the coolant nozzle relative to the grinding wheel. When the laser is removed and replaced with a seal plug, the stream of cooling fluid passing through the flow passage can be directed accurately at the grinding wheel for improved workpiece grinding.